UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,585	11/21/2001	Teddy Furon	PF990030	2926

7590 03/21/2005

Joseph S Tripoli
Thomson Multimedia Licensing Inc
CN 5312
Princeton, NJ 08543-0028

EXAMINER	
TABATABAI, ABOLFAZL	

ART UNIT	PAPER NUMBER
2625	

DATE MAILED: 03/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/926,585	FURON ET AL.	
	Examiner	Art Unit	
	Abolfazl Tabatabai	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 November 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 9-11* is/are rejected.

7)☒ Claim(s) *8* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 November 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 1-11 are objected to because of the following informalities:

The preamble of claims 1 and 3 should begin with " a method ".

The preamble of claims 6 and 9 should begin with " a device ".

The preamble of claims 2, 4 and 5 should begin with " the method ".

The preamble of claim 7, 8, 10 and 11 should begin with " the device ".

Applicant should amended claim 4 to explicity recite the limitations corresponding to the insertion of watermark.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3, 6, are rejected under 35 U.S.C. 102(e) as being anticipated by Cooklev (U S 6,359,998 B1).

Regarding claim 1, Cooklev discloses method for inserting watermark into data (x) representing a content to be protect, comprising the steps of:

a) supplying a pseudo random noise sequence (v) (column 9, lines 50-54) to the input of a filter with predefined impulse response (h) (column 7, lines 57-65 and column 8, line 29);

b) adding said filtered pseudo noise sequence (w) to said data (column 9, lines 50-54).

Regarding claim 3, Cooklev discloses method for a watermark in data (r) representing a content received, comprising the steps of:

i) performing a spectral analysis of said data (column 18, lines 29-33); and,

ii) deducing therefrom whether said data include a pseudo noise sequence which has been filtered by a filter with predefined spectral response (H (f)) (column 9, lines 50-58).

Claim 6 is similarly analyzed as claim 1 above.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 2, 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooklev (U S 6,359,998 B1) in view of Mansour (U S 6,353,637 B1).

Regarding claim 2, Cooklev is silent about the specific details regarding method to claim 1, further comprising the steps of:

c) performing a pseudo random interleaving (p) of the data (x) before step b); and,

d) performing an inverse interleaving after step b) so as to obtain the watermark data.

In the same field of endeavor (spread spectrum), however, Mansour discloses multi stream in-band on-channel systems comprising the steps of:

c) performing a pseudo random interleaving (p) of the data (x) before step b) (column 6, lines 18-19 and 33-35); and,

d) performing an inverse interleaving after step b) so as to obtain the watermark data (column 17, lines 16-33).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use pseudo random interleaving and inverse interleaving as taught by Mansour in the system of Cooklev because Mansour provides Cooklev an improved system with a significant advantages over conventional systems, including, for

example, improved coverage area and reduced memory requirements. In addition one or more of the techniques of this system can be applied to other types of digital information, including, for example speech, data, video, and image information.

Regarding claim 4, Cooklev is silent about the specific details regarding method according to claim 3, for detecting a watermark in data (r) representing a content received, the watermark being adapted to be inserted in accordance with the method according to claim 2, further comprising:

iii) performing, before step I), a pseudo random interleaving (p) of data (r) received, which is identical to the interleaving performed in step (c).

In the same field of endeavor (spread spectrum), however, Mansour discloses multi stream in-band on-channel systems comprising the steps of:

iii) performing, before step I), a pseudo random interleaving (p) of data (r) received (column 8, lines 5-9), which is identical to the interleaving performed in step (c) (column 3, lines 39-44).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use pseudo random interleaving and inverse interleaving as taught by Mansour in the system of Cooklev because Mansour provides Cooklev an improved system with a significant advantages over conventional systems, including, for example, improved coverage area and reduced memory requirements. In addition one or more of the techniques of this system can be applied to other types of digital information, including, for example speech, data, video, and image information

Claim 7 is similarly analyzed as claim 2 above.

6. Claim 9 is rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al (US 5,901,178).

Regarding claim 9, Lee discloses device for detecting a watermark in data (r) representing the content reveived, comprising:

means for estimating the power spectral density of said data (column 7, lines 45-48).

means of likelihood testing of hypotheses (column 16, lines 60-67) so as to estimate whether said data include a pseudo noise sequence which has been filtered by a filter with predefined spectral response (H (f)) (column 15, lines 53-61).

7. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al (US 5,901,178) in view of Mansour (U S 6,353,637 B1).

Regarding claim 10, Lee is silent about the specific details regarding device according to claim 10, adapted for detecting a watermark inserted by an insertion device wherein:

means of pseudo random interleaving of the data (r) representing the content received, which are adapted for performing the same interleaving (p) as said first interleaving means of the insertion device, said interleaving data (r) being supplied to said means for estimating the power spectral density.

In the same field of endeavor (spread spectrum), however, Mansour discloses multi stream in-band on-channel systems comprising the step of:

means of pseudo random interleaving of the data (r) representing the content received, which are adapted for performing the same interleaving (p) as said first

interleaving means of the insertion device, said interleaving data (r) being supplied to said means for estimating the power spectral density (column 6, lines 16-19 and 33-35). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use pseudo random interleaving as taught by Mansour in the system of Lee because Mansour provides Lee an improved system with a significant advantages over conventional systems, including, for example, improved coverage area and reduced memory requirements. In addition one or more of the techniques of this system can be applied to other types of digital information, including, for example speech, data, video, and image information.

Regarding claim 11, Lee disclose device according to claim 10, adapted for detecting a watermark inserted by an insertion device wherein:

means for transforming the content received into (r) representative of said content, said transforming means being adapted for performing the same transformation as the transforming means of the insertion device (column 5, lines 26-37).

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cooklev (U S 6,359,998 B1) in view of Mansour (U S 6,353,637 B1) as applied to claims 1 and 3 above, and further in view of Wong (U S 6,504,941 B2).

Regarding claim 5, Cooklev and Mansour are silent about the specific details regarding watermarking system using the watermark insertion method according to claim 1 and a watermark detection method according to claim 3, wherein a first series of parameters (v, h), the private key, is used for the insertion of the watermark and a

second series of parameters (H (f)), the public key, is used for the detection of the watermark, so that:

Knowledge of the public key does not make it possible to know the private key; and,

Knowledge of watermark detection method and of the public key does not make it possible to delete or modify the watermark.

In the same field of endeavor (watermarking), however, Wong discloses method and apparatus for digital watermarking of images comprising the steps of:

Knowledge of the public key does not make it possible to know the private key (column 3, lines 4-9); and,

Knowledge of watermark detection method and of the public key does not make it possible to delete or modify the watermark (column 2, lines 22-29).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use private key and public key as taught by Mansour in the system of Lee because Mansour provides Lee an improved an invisible watermark technique that can serve the two purposes of ownership verification and authentication, that can detect changes in pixel values as well as image size, and that may be used in public key or alternatively, secret key watermarking system.

Allowable Subject Matter

9. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other prior art cited

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U. S. Patent (U S 6,801,999 B1) to Venkatesan is cited for passive and active software objects containing bore resistant watermarking.

U.S. Patent (U S 6,499,128 B1) to Gerlach et al is cited for iterated soft-decision decoding block codes.

U. S. Patent (U S 6,819,708 B1) to Lim et al is cited for ocqpsk modulator and modulating method using 1-bit input fir filter.

U. S. Patent (U S 5,450,453) to Frank is cited for method, apparatus and system for decoding a non-coherenily demodulated signal.

U. S. Patent (U S 4,977,578) to Ishigaki et al is cited for spread spectrum communication system.

Contact Information

11. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to ABOLFAZL TABATABAI whose telephone number is (703) 306-5917.

The Examiner can normally be reached on Monday through Friday from 9:30 a.m. to 7:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Mehta Bhavesh M, can be reached at (703) 308-5246.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Abolfazl Tabatabai

Patent Examiner

Group Art Unit 2625

March 10, 2005

A-Tabatabai

KANJIBHAI PATEL
PRIMARY EXAMINER